

AMENDMENTS TO THE CLAIMS

1-13. (Cancelled)

14. (Currently Amended) A picture coding apparatus which ~~codes pictures on a picture-by-picture basis, and generates a random access unit as a part of a stream, the random access unit including the coded pictures~~ generates a random access unit as a part of a stream, the random access unit including picture access units each having (i) a coded picture data access unit storing coded picture data, and (ii) a picture parameter set access unit storing a picture parameter set used for decoding the coded picture data, said picture coding apparatus comprising:

a coding unit operable to generate pieces of the coded picture data by coding the pictures on a picture-by-picture basis a picture;

an information generation unit operable to generate a plurality of picture parameter sets, each of the picture parameter sets being used for decoding each piece of the coded picture data the picture parameter set used for decoding the coded picture data;

a first storage unit operable to store the pieces of the coded picture data respectively in access units that constitute the random access unit the coded picture data in the coded picture data access unit;

a second storage unit operable to store first picture parameter sets in a first access unit that is located at a head of the random access unit a predetermined number of picture parameter sets including the picture parameter set in a picture parameter set access unit included in a picture access unit located at a head of the picture access units included in the random access unit; and

a third storage unit operable to store a second picture parameter set in a second access unit, coded picture data of the second access unit referring to the second picture parameter set a picture parameter set which is different from the predetermined number of picture parameter sets stored by said second storage unit, the picture parameter set being stored in a picture parameter set access unit included in a picture access unit that stores coded picture data which refers to the different picture parameter set,

wherein each of the picture parameter sets set includes at least one of a type of variable length coding method, an initial value of a quantization step, and a number of reference pictures, and

an I-picture is stored in the coded picture data access unit included in the picture access unit located at the head.

15. **(Currently Amended)** A picture decoding apparatus which decodes ~~a plurality of coded pictures~~ the coded picture data out of the stream generated by said picture coding apparatus according to Claim 14, said picture decoding apparatus comprising:

~~a picture specification unit operable to specify a picture to be decoded from the plurality of the coded pictures;~~

~~an obtainment unit operable to obtain the first picture parameter set from the first access unit or to obtain the second picture parameter set from the coded picture data of the second access unit referring to the second picture parameter set, the first access unit storing a plurality of the first picture parameter sets, each of picture parameter sets includes at least one of a type of variable length coding method, an initial value of quantization step, and a number of reference pictures~~ (i) a picture parameter set, used for decoding a picture to be decoded, from a picture parameter set access unit included in the picture access unit located at the head of the picture access units included in the random access unit, and (ii) a picture parameter set, used for decoding a picture to be decoded, from a picture parameter set access unit included in a picture access unit storing coded picture data of the picture to be decoded in the case where the picture parameter set, used for decoding the picture to be decoded, cannot be obtained from the picture parameter set access unit included in the picture access unit located at the head;

~~a first decoding unit operable to decode the first picture parameter set or the second picture parameter set; and~~

~~a second decoding unit operable to decode the picture to be decoded by referring to the first picture parameter set or the second picture parameter set.~~

16. **(Currently Amended)** A picture coding method which ~~codes pictures on a picture-by-picture basis, and generates a random access unit as a part of a stream, the random access unit including the coded pictures~~ generates a random access unit as a part of a stream, the random access unit including picture access units each having (i) a coded picture data access unit storing coded picture data, and (ii) a picture parameter set access unit storing a picture parameter set used for decoding the coded picture data, said picture coding method comprising:

~~generating pieces of the coded picture data by coding the pictures on a picture-by-picture basis a picture;~~

~~generating a plurality of picture parameter sets, each of the picture parameter sets being used for decoding each piece of the coded picture data~~ the picture parameter set used for decoding the coded picture data;

~~first storing the pieces of the coded picture data respectively, in access units that constitute the random access unit~~ the coded picture data in the coded picture data access unit;

~~second storing first picture parameter sets in a first access unit that is located at a head of the random access unit~~ a predetermined number of picture parameter sets including the picture parameter set in a picture parameter set access unit included in a picture access unit located at a head of the picture access units included in the random access unit; and,

~~third storing a second picture parameter set in a second access unit, coded picture data of the second access unit referring to the second picture parameter set~~ a picture parameter set which is different from the predetermined number of picture parameter sets stored by said second storage unit, the picture parameter set being stored in a picture parameter set access unit included in a picture access unit that stores coded picture data which refers to the different picture parameter set,

~~wherein each of the picture parameter sets~~ set ~~includes at least one of a type of variable length coding method, an initial value of a quantizing step, and a number of reference pictures., and~~

~~an I-picture is stored in the coded picture data access unit included in the picture access unit located at the head.~~

17. **(Currently Amended)** A picture decoding method which decodes ~~a plurality of coded pictures~~ the coded picture data out of the stream generated by said picture coding method according to Claim 16, said picture decoding method comprising:

~~specifying a picture to be decoded from the plurality of coded pictures;~~

~~obtaining the first picture parameter set from the first access unit or obtaining the second picture parameter set from the coded picture data of the second access unit referring to the second picture parameter set, the first access unit storing a plurality of the first picture parameter sets, each of picture parameter sets includes at least one of a type of variable length coding~~

~~method, an initial value of quantization step, and a number of reference pictures (i) a picture parameter set, used for decoding a picture to be decoded, from a picture parameter set access unit included in the picture access unit located at the head of the picture access units included in the random access unit, and (ii) a picture parameter set, used for decoding a picture to be decoded, from a picture parameter set access unit included in a picture access unit storing coded picture data of the picture to be decoded in the case where the picture parameter set, used for decoding the picture to be decoded, cannot be obtained from the picture parameter set access unit included in the picture access unit located at the head;~~

~~first decoding the first picture parameter set or the second picture parameter set; and~~

~~second decoding the picture to be decoded by referring to the first picture parameter set or the second picture parameter set.~~

18. **(Currently Amended)** ~~A recording method for coding pictures on a picture-by-picture basis, and recording a stream including a random access unit having the plurality of coded pictures into a computer-readable recording medium which generates a random access unit as a part of a stream, the random access unit including picture access units each having (i) a coded picture data access unit storing coded picture data, and (ii) a picture parameter set access unit storing a picture parameter set used for decoding the coded picture data; and record the generated random access unit in a recording medium, said recording method comprising:~~

~~generating pieces of the coded picture data by coding the pictures on a picture-by-picture basis a picture;~~

~~generating a plurality of picture parameter sets, each of the picture parameters sets being used for decoding each piece of the coded picture data the picture parameter set used for decoding the coded picture data;~~

~~first storing the pieces of the coded picture data respectively in access units that constitute the random access unit the coded picture data in the coded picture data access unit; and~~

~~second storing first picture parameter sets in a first access unit that is located at a head of the random access unit a predetermined number of picture parameter sets including the picture parameter set in a picture parameter set access unit included in a picture access unit located at a head of the picture access units included in the random access unit; and~~

~~third storing a second picture parameter set in a second access unit, coded picture data of~~

~~the second access unit referring to the second picture parameter set~~ a picture parameter set which is different from the predetermined number of picture parameter sets stored by said second storage unit, the picture parameter set being stored in a picture parameter set access unit included in a picture access unit that stores coded picture data which refers to the different picture parameter set;

~~recording the stream generated in said first storing, second storing and third storing onto the recording medium;~~

~~wherein each of the picture parameter sets~~ set includes at least one of a type of variable length coding method, an initial value of a quantization step, and a number of reference pictures,
and

an I-picture is stored in the coded picture data access unit included in the picture access unit located at the head.

19. **(Currently Amended)** ~~A picture coding apparatus according to Claim 14, wherein said second storage unit is operable to have a predetermined maximum number of the first picture parameter sets which can be stored in the first access unit.~~ A recording medium, in which a stream is recorded, including a random access unit included picture access units each having (i) a coded picture data access unit storing coded picture data, and (ii) a picture parameter set access unit storing a picture parameter set used for decoding the coded picture data, said recording medium,

wherein a predetermined number of picture parameter sets are included in the picture parameter set access unit included in a picture access unit located at a head of the picture access units included in the random access unit,

a picture parameter set, which is different from the predetermined number of picture parameter sets, is stored in a picture parameter set access unit included in a picture access unit that stores coded picture data which refers to the different picture parameter set,

the picture parameter set includes at least one of a type of variable length coding method, an initial value of a quantization step, and a number of reference pictures, and

an I-picture is stored in the coded picture data access unit included in the picture access unit located at the head.

20. (Canceled)